CLAIMS

I claim:

1. Heart pacemaker electrode arrangement (1) having a heart pacemaker electrode (2) that acts upon the outside of a heart (100) or acts upon the heart (100) from the outside and/or is arranged with a pole (2a) in the heart tissue (101), and runs to an implanted heart pacemaker (4), which electrode can be fixed in the operating position by an anchor (3), and having a tool that serves the positioning and fixing of the anchor (3), characterized in that a rod or stylet (9) is provided as the tool, that the anchor (3) has an attachment site for the tool (9), by which the anchor (3) can be pushed into or through the myocardium (101), that the anchor (3) is attached to a pulling element or thread (7), via which the heart pacemaker electrode (2), which displays an inner guide channel (8) and accommodates therein the pulling element or the thread (7), can be moved in a fitted and controlled manner, and that the heart pacemaker electrode (2), in the use location, is connected or connectable to the pulling element or thread (7) situated in the guide channel (8) of the electrode.

2. Electrode arrangement as claimed in claim 1, characterized in that the anchor (3) has as the attachment site for the tool (9) a deformation that can be detachably coupled to the tool (9).

3. Electrode arrangement as claimed in claim 2, characterized in that the anchor (3) at its rear side in the insertion direction has a cross sectional diminution for an attachable end of the tool (9) and/or a receiver aperture (10) open at the rear end and closed at the opposite end for the rod-shaped tool or stylet (9) that fits into this aperture, whereby the anchor (3) can be moved into or through the myocardium (101).

4. Electrode arrangement as claimed in claim 3, characterized in that the heart pacemaker electrode (2) has at a distance from its end and from the anchor (3) at least one exit opening (11) from its guide channel (8) for the pulling element or thread (7) and that in the operating position the pulling element or thread (7) is connected, at or outside this opening (11), to the heart pacemaker electrode (2), for example fixed or knotted to a loop.

5. Electrode arrangement as claimed in claim 4, characterized in that the pulling element (7) in the operating position is made taut between the anchor (3) and its connection point to the heart pacemaker electrode (2).

6. Electrode arrangement as claimed in claim 5, characterized in that said arrangement displays a receiver tube or cannula (13) that holds within itself the anchor (3) and the tool (9) during the feeding and/or insertion into the exterior of the heart, and that, at the same time, the pulling element or thread (7) runs at the outside of the receiver tube or cannula (13).

7. Electrode arrangement as claimed in claim 6, characterized in that the anchor (3) in the operating position is formed by one or several barb-like parts or elements or pins or wings that during the insertion are collapsed, which parts are preferably collapsed and/or swung against a spring force during the insertion inside the receiver tube or cannula (13) and after the leaving or withdrawal of the receiver tube or cannula (13) can be expanded and/or swung into a position at an angle to the pulling element (7).

8. Electrode arrangement as claimed in claim 7, characterized in that the anchor (3) has a rod form and the deformation or opening (10) serving the receiving of the end of the tool (9) runs in the longitudinal direction of this anchor (3) and is designed in particular as a pocket hole, and that the pulling element (7) is arranged between both ends of this rod-shaped anchor (3), leaving at an angle to the orientation of the rod-shaped anchor (3).

9. Electrode arrangement as claimed in claim 8, characterized in that the pulling element (7) is arranged approximately in the center between the two ends of the rod-shaped anchor (3) or nearer to the front end in the insertion direction than to the end displaying the deformation for the tool (9).

10. Electrode arrangement as claimed in claim 9, characterized in that a stop (12) is provided at a distance from the anchor (3) on the pulling element or thread (7) for the electrode (2) movable on the latter, by means of which stop the end of the electrode (2) in the operating position can be positioned on the heart (100) at a fixed distance from the anchor (3).

11. Electrode arrangement as claimed in claim 10, characterized in that the stop (12) on the pulling element or thread (7) consists of a thickening or a knot, the cross section of which exceeds, at least in a region, the inner cross section of the guide channel (8) or a narrowed section of the guide channel (8) in the electrode (2).

12. Electrode arrangement as claimed in claim 11, characterized in that said arrangement has a biventricular design and a common supply lead (5) displays two electrodes (2) branching out and then running separately to the heart (100), each of which electrodes has a guide channel (8) and an anchor (3) for attachment to the outside of the heart (100).

13. Electrode arrangement as claimed in claim 12, characterized in that an exit opening (11) from the guide channel (8) located within the electrodes (2) is provided at the branching location (6) for each pulling element or thread (7) connected to an anchor (3).

14. Electrode arrangement as claimed in claim 13, characterized in that the pulling elements (7) out of the electrodes (2), which proceed from a common branching location (6), can be or are knotted together for the fixing.

15. Electrode arrangement as claimed in claim 14, characterized in that the anchor (3) and/or the thread (7) consist(s) of non-conducting material or of plastic, for example of non-dissolving surgical stitching material.

16. Electrode arrangement as claimed in claim 15, characterized in that the anode of the electrode (2) is arranged outside the heart (100) at a distance from the cathode or, as the case may be, from the pole (2a) situated on the heart, and in the case of a biventricular, branched electrode (2), the anodes are arranged in the region of the common supply lead (5) before the branching (6).

17. Electrode arrangement as claimed in claim 16, characterized in that the exit opening or openings (11) for the pulling elements or threads (7) in the operating position is/are closed by a medical adhesive.